

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1 - 16 (Canceled)

17. (New) A semiconductor device comprising:
a semiconductor body region of one conductivity type having parallel top and bottom surfaces;
a plurality of spaced solid pylons of one material and another conductivity type extending through at least a portion of said body region; and
a respective MOSgated structure including a source region disposed in a channel region which is positioned above and in contact with each of said pylons, a first portion of each of said pylons being in charge balance with the surrounding body region, and a second portion of each of said pylons being disposed between a respective first portion and a respective channel region; each second portion having a concentration of impurities higher than that of said first portion and a length together configured to draw avalanche current toward itself and away from the R_p region in said channel region.

18. (New) The device of claim 17, wherein said concentration of impurities in said second portion is about 15-20% greater than that in said first portion.

19. (New) The device of claim 18, wherein said length of said second portion is less than about 25% of the length of said pylon.

20. (New) The device of claim 17, wherein said length of said second portion is less than about 25% of the length of said pylon.

21. (New) The device of claim 17, wherein said one conductivity is N type and said another conductivity is P type.

22. (New) A semiconductor device comprising:
a MOS-gated structure having an R_b' region; and
a solid semiconductor pylon of one material and one conductivity type in a semiconductor body of another conductivity type, said solid pylon including one portion in charge balance with its surrounding semiconductor body and another portion having a concentration of impurities higher than said one portion, said another portion being configured and positioned within said semiconductor body to draw avalanche current away from said R_b' region.

23. (New) The device of claim 22, wherein said concentration of impurities in said another portion is about 15-20% greater than that in said one portion.

24. (New) The device of claim 23, wherein the length of said another portion is less than about 25% of the length of said solid pylon.

25. (New) The device of claim 22, wherein the length of said another portion is less than about 25% of the length of said solid pylon.

26. (New) The device of claim 22, wherein said one conductivity is P type and said another conductivity is N type.